

UHV Kelvin Probe System

UHVKP020

The **Kelvin Probe** is a non-contact, non-destructive vibrating capacitor device used to measure the work function (wf) of conducting materials or surface potential of semiconductor or insulating surfaces. The wf of a surface is typically defined by the topmost 1-3 layers of atoms or molecules, so the **Kelvin Probe** is one of the most sensitive surface analysis techniques available. **KP Technology** Systems offer very high wf resolution of 1-3 meV, currently the highest achieved by any commercial device.

The UHVKP020 is a complete **Kelvin Probe** solution for researchers investigating in Ultra High Vacuum. This system includes everything the researcher needs to produce reliable, repeatable results, due to the unique features provided by the 'Baikie System'. The UHVKP020 records up to 40,000 data points in any one measurement.



"The Kelvin Probe that you developed is very wonderful because the distance is kept in measurement using gradient constant function. It is hard to set the distance between sample and probe with other systems. We have two company's Kelvin probes: the KP Technology System is better in sensitivity, easiness to use and customer service."

*Dr. Shinjiro Yagyu
National Institute for Materials Science
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THE BAIKIE SYSTEM

All KP Technology Systems are based upon unique features developed by Professor Iain Baikie. These features are unsurpassed by any other company.

- Highest work function/surface potential resolution of 1 - 3 meV (standard)
- Voice Coil driver provides very high rejection of driver talkover noise compared with piezoelectric systems
- Off null signal detection system for improved resolution - Our Signal-to-Noise (S/N) features remain unsurpassed in the field
- Height regulation feature to control the tip to sample spacing during measurements and scans which allows for stable, reliable and repeatable data
- Full digital control of all Kelvin Probe parameters
- Quick change probe tip allowing user selectable spatial resolution

WHAT IS INCLUDED?

- UHV Kelvin Probe Head Unit with Tip (user specified diameter)
- Digital Control Unit
- 50mm or 100mm Manual Translator
- Dell PC with Monitor
- Data Acquisition System (Preinstalled in PC)
- UHV Kelvin Probe Software (on CD and Preinstalled on PC)
- NI-DAQ Software (on CD and Preinstalled on PC)
- Associated System Cables and Manuals
- 12 Month Warranty

ADDITIONAL INFORMATION

- Mounting Port – DN40 (CF 2.75 inch OD)
- Mounting Geometry – Normal to Sample Surface
- Flange to Sample distance – User defined
- Vacuum Compatibility – 2×10^{-11} mBar
- Visualisation – 2D maps of surface Potential
- Other Options – Motorised Translation, UHVKP010, UHVS KP or Bespoke UHV Designs

SOFTWARE FEATURES

User digital control of probe amplitude, probe frequency, mean spacing, and tip potential. Automatic measurement of Kelvin Probe signal and work function averaging. Export of data to Excel compatible spreadsheets. Software features tip tracking control during scanning and real-time 2D reporting of sample work function and sample height topographies.

